

USSR

BELYAYEVA, V. A., et al., Metallovedeniye, No 5, May 70, pp 6-8

carbon content to less than 0.01% and alloying the steel with Si and Nb, the AB_2 hexagonal phase is formed. It was also noted that there is no relationship between the tendency toward intercrystalline corrosion of the steel and an increase in the Cr content of the carbide phase or the amount of Cr-containing phases.

2/2

JAV. KOV, G.N.

SPRS 59208

6-73

V-0. MECHANISM OF THE PROCESS OF EPITAXIAL GROWTH OF ZINC SULFIDE AND
TELLURIDE ON THE CALCID ASENIIDE IN THE HYDROGEN FLOW
described by H. P. Koryotnyk, V. N. Kondratov, V. S. Orlov, G. N. Savkov, Moscow:
Institute of Physical Chemistry, USSR Academy of Sciences, 12-17 June, 1971, p. 37

A study was made of the thermodynamic equilibrium in the ZnS-H₂ and the
ZnTe-H₂ systems. The partial pressures of the components of the gas phase were
calculated as temperature functions. The checking of the thermodynamic calcu-
lation by comparison of the calculated and experimental rates of removing the
demonstrated that in the temperature range of 625-925°C the results of the
calculation agree well with the thermodynamic equilibrium in the investigated
systems.

The processes of transport and growth of zinc chalcogenides in ZnS-H₂
and ZnTe-H₂ systems were studied. A comparison of the experimental deposition
rates of zinc sulfide and telluride with the rate calculated by the quasi-equilibrium
orientation of the substrate indicate that the growth process takes place with
reference to a mixed diffusion-kinetic mechanism. The authors of
the transport systems.

BIBLIOGRAPHY

1. Yu. N. Rumyantsev, P. A. Kuznetsov, Izv. SOAN SSSR, Ser. Khim. nauk (News of
the Siberian Department of the USSR Academy of Sciences, Chemical Sciences
Series), No 9, vyp. 4, 49, 1969.
2. I. M. Koryotnyk, Izv. AN SSSR, Neorgan. khim. (News of the USSR Academy
of Sciences, Inorganic Chemistry), No 7, 925, 1971.

USSR

SIMONOV, V. D., SHAKIROVA, A. M., and SAVKOVA, N. Ya.

"Reaction of 3,4-Chloroaniline with Certain Chlorocarboxylic Acids"

Dokl. Neftikhim. Sektsii. Bashkir. Resp. Pravl. Vses. Khim. O-va im. D. I. Mendeleyeva [Works of Petrochemical Section, Vashkir Republic Administration of All-Union Chemical Society imeni D. I. Mendeleyev], Vol 6, 1971, pp 362-364. (Translated from Referativnyy Zhurnal Khimiya, No 5, Moscow, 1972, Abstract No 5N675 by G. V. Kuznetsova)

Translation: The reaction of 3,4-Cl₂C₆H₃NH₂ (I) with chlorocarboxylic acids is studied. When equimolar quantities of I and ClCH₂COOH or MeCHCl COOH are boiled in PhMe with azeotropic removal of water for 10 hours, the corresponding anilides were produced: 3,4-Cl₂C₆H₃NHCOCH₂Cl, C₈H₆Cl₃NO, mp 100-1° (iso-C₈H₂₀); and 3,4-Cl₂C₆H₃NHCOCHClMe, C₉H₈Cl₃NO, yield 49.4%, mp 123-4° (iso C₈H₂₀). The anilide is not formed of I and pentachloropentadienic acid under similar conditions, but only the 3,4-dichloroaniline salt of the acid, C₁₁H₆Cl₇NO₂, was produced, yield 73.6%, mp. 101.5-2.5° (benzene). CCl₂=CClCOOH reacts similarly, producing the 3,4-dichloroaniline salt, C₉H₆Cl₅NO₂, yield 34.6%, mp 115-8° (benzene). 3,4-Cl₂C₆H₃N=CHCCl=CClCONHC₆H₃ Cl₂-3,4, C₁₆H₇Cl₃N₂O, is produced, mp 223°. The anilides and salts produced are potential herbicides.

1/1

FILE--BIOSYNTHESIS OF COENZYME A FROM PANTOTHENATE DERIVATIVES IN RATS
-U- UNCLASSIFIED PROCESSING DATE--18SEP70
AUTHOR--(04)--ROZANOV, A.YA., SAVLUCHINSKAYA, L.G., ZHDANOVICH, YE.S.,
KOPELEVICH, V.M.
COUNTRY OF INFO--USSR
SOURCE--BIOKHIMIYA 1970, 35(1), 58-63
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ENZYME, BIOSYNTHESIS, CELL PHYSIOLOGY, MITOCHONDRION, VITAMIN
B COMPLEX, ADENOSINE TRIPHOSPHATE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0839
CIRC ACCESSION NO--AP0055541
STEP NO--UR/0218/70/035/001/0058/0063
UNCLASSIFIED

019
CTRC ACCESSION NO--AP0055541
ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. PANTOTHENATE ADMINISTERED
PARENTERALLY TO RATS INCREASED THE CONTENT OF COA IN ORGANS ONLY WHEN
ATP, CYSTEINE, THIAMINE, AND NICOTINATE WERE ADMINISTERED
SIMULTANEOUSLY. THE DEGREE OF COA BIOSYNTHESIS CORRELATED WITH
INCREASING DOSES OF ITS PRECURSORS AND OF THE VITAMINS AND WAS INCREASED
BY HYDROCORTISONE. 4-PHOSPHO-D-PANTOTHENATE AND ESP.
S-BENZOYL-D-PANTETHEINE AND 4-PHOSPHO-S-BENZOYL-D-PANTETHEINE WERE MORE
EFFECTIVE THAN PANTOTHENATE IN INDUCING COA SYNTHESIS, POSSIBLY DUE TO
THEIR CLOSER STRUCTURAL SIMILARITY TO THE COENZYME AND THEIR MORE RAPID
PERMEABILITY THROUGH THE BLOOD TISSUE BARRIERS AND THE CELLULAR AND
MITOCHONDRIAL MEMBRANES.

UNCLASSIFIED

PROCESSING DATE--18SEP70

UNCLASSIFIED

U16
TITLE--CONTINUOUS PROCESS FOR COOKING AND PRODUCING LEAD CRYSTAL TABLEWARE
-U-
AUTHOR--(05)--MOKHNIN, N.F., FIGUROVSKIY, I.A., SAVONICHEV, G.V., ZUBANOV,
V.A., YUDIN, N.A.
COUNTRY OF INFO--USSR
SOURCE--STEKLO KERAM. 1970, 27(2), 8-10
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LEAD, METAL CRYSTAL, GLASS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/1991
CIRC ACCESSION NO--AP0118950
STEP NO--UR/0072/70/027/002/0008/0010
UNCLASSIFIED

2/2 016

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118950

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COM. TECHNOLOGY FOR CONTINUOUS PRODUCTION OF TABLEWARE ARTICLES MADE FROM LEAD CRYSTAL WAS WORKED OUT FOR THE 1ST TIME. A BRIEF HISTORY OF THE PROBLEM AT HAND IS PRESENTED. AN ATTEMPT WAS ALSO MADE TO OBTAIN THE NECESSARY DATA FOR DESIGNING FUTURE FURNACES WITH A LARGER CAPACITY. THE BOUNDARY CONDITIONS WERE DETD. FOR THE CASE OF HEATING THIN AND MASSIVE BODIES SIMULTANEOUSLY BY RADIATION AND CONVECTION. THE COMPLEX HEAT TRANSFER IN THE UPPER CHAMBER WAS ALSO INVESTIGATED. PB OXIDE LOOSES FROM THE MELT ARE DECREASED BY USING AIR PREHEATED AND SATD. BY VOLATILE COMPONENTS IN A REGENERATIVE HEAT EXCHANGER. THIS METHOD ALSO IMPROVES THE HEAT TRANSFER IN THE FURNACE. FURTHERMORE, SUCH A PRODUCTION SETUP IS MUCH MORE ECONOMICAL. FACILITY: UPR. VLADIMIRSTEKO, VALDIMIR, USSR.

UNCLASSIFIED

017
UNCLASSIFIED
PROCESSING DATE--13NOV70
TITLE--PREPARATION OF AN EXPERIMENTAL BATCH OF THE ADDITIVE GF11 AT THE
POLOTSK PETROLEUM REFINERY -U-
AUTHOR--(04)-MELKIN, YU.A.; VYALTSIN, N.I.; SHAPOVALOVA, L.M.; SAYONKINA,
M.G.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970, (5), 48-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY, MATERIALS
TOPIC TAGS--CHEMICAL-SYNTHESIS, ANTIOXIDANT ADDITIVE, ZINC OXIDE,
PETROLEUM REFINERY/(U)GF11 ANTIOXIDANT ADDITIVE; (U)VNIINP360 ADDITIVE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1959
CIRC ACCLSSION NO--AP0133803
STEP NO--UR/0318/70/000/005/0048/0049
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0133803

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ANTIOXIDANT DF-11 WAS PREPD. BY TREATING P SUB2 S SUB5 WITH MIXED ISO-BUOH, 2, ETHYLHEXANOL, NEUTRALIZING THE ACID WITH ZNO, DILG. WITH SOLVENT GASOLINE "KALOSHA", SEPG. THE MECH. IMPURITIES, AND DISTG. THE SOLVENT. THE SAME EQUIPMENT WAS USED FOR PREPG. THE ADDITIVE VNIINP-360. FACILITY: POLOTSK. NEFTEPERERAB. ZAVOD, POLOTSK, USSR.

UNCLASSIFIED

1/2 020
UNCLASSIFIED
TITLE--EFFECT OF WATER IN OIL ON THE DECOMPOSITION OF THE VNIINP 360, ALL
UNION SCIENTIFIC RESEARCH INSTITUTE FOR THE PROCESSING OF PETROLEUM AND
AUTHOR--(02)-SHAPUVALOVA, L.A.; SAVONKINA, M.G.
COUNTRY OF INFO--USSR
SOURCE--NEFTEPERERAB. NEFTEKHIM. (MOSCOW) 1970. (4), 32-3
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LUBRICANT ADDITIVE, CHEMICAL STABILITY, CHEMICAL
DECOMPOSITION, ZINC COMPOUND, BARIUM COMPOUND, WATER/(U)VNIINP360
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/1952
CIRC ACCESSION NO--AP0133796
STEP NO--UR/0318/70/000/004/0032/0033
UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--20NOV70
CIRC ACCESSION NO--AP0133796
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NO DECOMP. OF THE ADDITIVE
OCCURRED IN DRY OIL, BUT EVEN 0.03PERCENT H SUB2 O DECOMP. THE ADDITIVE
TO GIVE PPTS. CONTG. THE BA AND ZN OF THE ADDITIVE, THE AMT. OF PPT.
DEPENDED ON THE AMT. OF WATER. FACILITY: POLOTSK. NEFTEPERERAB.
ZAVGO. POLOTSK, USSR.

UNCLASSIFIED

1/2 022
UNCLASSIFIED
TITLE--EXTRAPANCREATIC DISEASES IN PATIENTS WITH CHRONIC PANCREATITIS -U-
AUTHOR-(102)-SAVOCHALENKO, I.S., KNYAZEV, I.I.
COUNTRY OF INFO--USSR
SOURCE--TERAPEVTICHESKIY ARKHIV, 1970, VOL 42, NR 6, PP 88-91
DATE PUBLISHED--70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--PANCREATITIS, DUODENUM, CARDIOVASCULAR SYSTEM, BLOOD
COAGULATION, PATHOLOGY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3002/1920
CIRC ACCESSION NO--AP0129269
STEP NO--UR/0504/70/042/006/0088/0091
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129269

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE AUTHORS STUDIED CHANGES IN THE DUODENUM, CARDIOVASCULAR SYSTEM, COAGULATING AND ANTICOAGULATING SYSTEMS OF THE BLOOD, ELECTROLYTE COMPOSITION OF THE BLOOD SERUM, LIVER AND THE BILE DUCTS IN PATIENTS WITH CHRONIC PANCREATITIS. CORRELATION IS SHOWN BETWEEN TRYPSIN, TRYPSIN INHIBITOR AND OTHER ENZYMES WHEN THEY ENTER THE BLOOD CANAL DUE TO WHAT INVOLVEMENT OF OTHER ORGANS AND SYSTEMS INTO THE PATHOLOGICAL PROCESS OCCURS. A SIGNIFICANT INCREASE OF PROTEOLYTIC ACTIVITY IN THE BLOOD SERUM AT THE STAGE OF EXACERBATION OF CHRONIC PANCREATITIS IS NOTED. ON THE BASIS OF THE DATA OF CLINICO BIOLOGICAL STUDIES THE INTER RELATION BETWEEN FUNCTIONAL, BIOCHEMICAL AND HORMONAL DISORDERS IN THE MENTIONED ORGANS IS SHOWN IN CHRONIC PANCREATITIS.

UNCLASSIFIED

USSR

UDC 546.431'824'21+546.16

NEKRASOV, M. M., SAVOSHCHENKO, V. S., SYCH, A. M., Kiev Poly-
technical Institute

"Fluorine-Containing Barium Titanate"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2175-2177

Abstract: A new type of solid solution based on barium titanate is produced by
interacting TiO_2 with SnF_2 in BF_3 --a substitution solid solution in the anionic
portion of the crystalline lattice of $BaTiO_3$ with the general formula $BaTi(OF)_3$.
The electrical parameters of the solid solutions produced are determined.

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1/2 013
TITLE--EFFECT OF THE TEMPERATURE USED IN PREPARING STARCH PHOSPHATE
STABILIZED EMULSIONS ON THEIR PHYSICOCHEMICAL PROPERTIES -U-
AUTHOR--(03)-SAVOSTIKOVA, N.F., RYBAKOVA, YU.S., LUKVANOV, A.B.
COUNTRY OF INFO--USSR
SOURCE--MASLO ZHIR. PROM. 1970, 36(3), 33-4
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--STARCH, PHOSPHATE, EMULSION, CHEMICAL STABILITY, THERMAL
STABILITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0699
STEP NO--UR/9085/70/036/003/0033/0034
NO--AP0119606
UNCLASSIFIED

2/2 013
CIRC ACCESSION NO--AP0119606

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE GREATEST DISPERSITY OF THE
FACILITY: MOSK.

TITLE EMULSIONS WAS REACHED AT 40DEGREES.
TEKHNOL. INST. PISHCH. PROM., MOSCOW, USSR.

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

1/2 052

TITLE--LARGE BENCH SCALE STUDY OF THE HEAT TRANSFER AND RADIATION FROM
FLAME ENVELOPES -U-

AUTHOR--(03)--MAGIDSON, M.A., SHAKHLIN, V.I., SAVOSTIN, D.Z.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 143-6

DATE PUBLISHED--70

SUBJECT AREAS--PHYSICS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METALLURGIC FURNACE, STEEL PRODUCTION, NATURAL GAS, FUEL
CONSUMPTION, COMBUSTION R AND D, HEAT TRANSFER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1785

STEP NO--UR/0148/70/013/002/0143/0146

CIRC ACCESSION NO--AT0115614

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

2/2 052

CIRC ACCESSION NO--AT0115614

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF THE MIXING OF GAS AND AIR AND OF MAZUT ADDNS. ON THE RADIATION OF THE FLAME AND ITS HEAT TRANSFER TOWARD THE HEARTH WHEN BURNING NATURAL GAS WAS STUDIED ON A LARGE BENCH IN A STEEL MILL. THE CONSTRUCTION OF THIS BENCH WAS DESCRIBED BY N. I. IVANOV, 1962. THE HEAT LOAD WAS CONST. AT 4 MILLION KCAL PER HR, THE TEMP. OF THE PREHEATED AIR WAS 650-700DEGREES, AND THE PERIOD BETWEEN THE SWITCHING OF AIR REGENERATORS WAS 25-30 MIN. WITHOUT MAZOUT ADDN. THE HIGHEST UTILIZATION OF O, AND THE HIGHEST TEMP. WAS PRODUCED WHEN ALL THE GAS WAA SUPPLIED TO THE UPPER BURNER AND THE CONSUMPTION OF THE AIR WAS 1 M PRIME3 AIR PER M PRIME3 GAS. CONSEQUENTLY, MIXING OF GAS AND AIR AND THE INCREASE OF LUMINOSITY OF THE FLAME LEAD TO THE DECREASE OF TEMP. AND LOWER HEAT TRANSFER. THE LUMINOSITY OF THE FLAME, AS WELL AS ITS RADIATION AND HEAT TRANSFER INCREASED WITH INCREASING AMTS. OF MAZOUT. THE MAZOUT SHOULD BE MIXED WITH AIR, WITH THE SIMULTANEOUS ADDN. OF GAS AND COMPRESSED AIR OR STEAM.

FACILITY: NAUCH. ISSLED. INST. MET., TIRELYABINSK, USSR.

UNCLASSIFIED

Physiology

USSR

UDC 617.761-009.24-02:612.014.47:531.113

SAVOSTIN, V. A., and NIKOLAYENKO, L. A.

"Frequency and Duration of Nystagmus in Response to Angular Acceleration of Various Intensities"

Moscow, Vestnik Otorinolaringologii, No 6, Nov/Dec 70, pp 63-67

Abstract: Stimulation of the vestibular apparatus in 25 apparently healthy boys 14 to 16 years of age was achieved by: (1) positive and negative angular acceleration ($+6.4 \text{ deg/sec}^2$ and $+12.8 \text{ deg/sec}^2$; duration 9.4 sec in both cases) in a rotating chair; and (2) "stop stimuli" of 12, 18, 30, 60 and 90 deg/sec (time of halting the chair, 0.2 sec). The frequency of nystagmus was found to vary with the intensity of acceleration, i.e., the greater the acceleration, the more frequent the nystagmus. The frequency of nystagmus in response to "stop stimuli" was also related to the intensity of the stimulus and could be described by a logarithmic function. The nature of the change in frequency of nystagmus from the beginning to the end of the nystagmic reaction varied with the duration of acceleration. For example, in response to acceleration of relatively low intensity (6.4 deg/sec^2 or 12.8 deg/sec^2 for 9.4 sec), the change in frequency of nystagmus was curvilinear in

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SAVOSTIN, V. A., and NIKOLAYENKO, L. A., Vestnik Otorinolaringologii, No 6,
Nov/Dec 70, pp 63-67

character. It is concluded that certain vestibular functions, at least with
certain limits, do not reflect the law of intensity of stimulation multiplied
by its duration.

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Acc. Nr:

AP0034220

Abstracting Service:
CHEMICAL ABST. 4-70

Ref. Code:

MR 0078

71269s Complexing of titanium with N-benzoyl- and N-cinnamoylphenylhydroxylamines studied by an extraction method. Lobanov, F. I.; Savostina, V. M.; Fes'kova, V. M.; Shpigun, O. A.; Peshkova, V. M. (Mosk. Gos. Univ., Moscow, USSR). *Zh. Neorg. Khim.* 1970, 15(1), 161-4 (Russ). Ti(IV) was extd. from 6N HClO₄ by C₆H₅ soln. of N-benzoylphenylhydroxylamine (HA) or N-cinnamoylphenylhydroxylamine (HA'). Extn. consts. (k_1) by HA and HA', given as log k_1 , are 9.61 ± 0.04 and 9.94 ± 0.04 , resp. Stability consts. (K_1 to K_4 and β), detd. by the Bjerrum or by the L. Sillen-D. Dyrssen (1953) are tabulated. For HA-Ti(IV) complex, log β_4 is ~ 46.2 and for HA'-Ti(IV) complex ~ 52.0 . HMIR

REEL/FRADE

19710873

USSR

DEMISYUK, Yu. N.; SEMENOV, G. V.; SAVOST'YANENKO, N. A.

"Effect of Nonlinearity of Photomaterial on the Characteristics of Amplitude Holograms"

Leningrad, Optika i Spektroskopiya; November, 1970; pp 994-1001

ABSTRACT: Expressions are derived for determining the magnitudes of the radiation in the first and second orders of the spectrum of amplitude holograms, taking into account the nonlinear character of recording on photomaterial. It is shown that the effect of nonlinearity on the distribution of light between different orders of the spectrum can be determined more precisely by means of nonlinearity factors depending on the contrast p of the interference pattern registered on the hologram, as well as on the contrast factor γ of the photomaterial. Analytic expressions are obtained by means of which it is possible to determine the nonlinearity factors for the first and second orders of the spectrum, and curves are drawn for their dependence on p for several values of γ . Results of an experimental check of the theory are given.

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SAVOST'YANOV, G. A.

MEDICINE

GREEN

JPRS 55360

14 June 1971

UDC 576.3:62-501.72

MODELING DIFFERENTIATION PROCESSES OF AN IDEAL CELL: AND DE-DIFFERENTIATION AS AN ACT OF ADAPTATION BY SUCH A CELL

[Article by G. A. Savost'yanov, Laboratory of Virology, Institute of Oncology of USSR Ministry of Health, Leningrad, Tsitolosiya, Russian, Vol 13, No 3, 1971, submitted 26 July 1969, pp 253-277]

The profound relationship between cell differentiation and malignant degeneration of tumors has been emphasized in the literature a number of times (Breton and Wille, 1963; Neyfakh, 1963; Fridenshteyn, 1965; and others). These phenomena are closely related to regeneration, metaplasia, and inverse development (differentiation) of tumors (Kodvedev 1963; Neyfakh 1963; Vasil'yev 1965; Braun 1967; Zhidunov 1967; Olenev 1967, and others). Disclosing the mechanisms of cell differentiation is thus an important problem of cytology.

Together with the study of the phenomenon of differentiation in its substantial and energy aspects, it is advisable to make a more detailed study of the regulation of cell differentiation in its informational aspect, using the methods of the general theory of systems and cybernetics. These disciplines are beginning to be successfully used in various fields of biology and medicine. There are very few interesting works (Ivarsen and Bjerknes 1963; Heimstra 1966; Grigorov and others 1967; Basterliga 1967, and others) which demonstrate the promise of such an approach for disclosing the informational structure and function of the system which regulate cell growth.

However, it appears very probable that the actual process of growth is not a pure result of the functioning of such a system. The numerous effects of injuries and errors in various elements of the regulating contours of the cell inevitably make their imprint on it. This produces a phenomenologically confused picture, and analysis of it is very complicated.

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--KINETICS OF THE ADSORPTION OF NITROGEN OXIDES ON FINE PORE SILICA
GEL IN A FLUIDIZED BED -U-
AUTHOR-(03)-KAZAKOVA, YE.A., KHITERER, R.Z., SAVOSTYANOVA, N.S.
CCOUNTRY OF INFO--USSR
SOURCE--KHIM. PROM., MOSCOW, 1970, 46,2, 98-103
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--NITROGEN OXIDE, SILICA GEL, FLUIDIZED BED, CHEMICAL
KINETICS/(U)ASM SILICA GEL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0885 STEP NO--UR/0064/70/046/002/0098/0103
CIRC ACCESSION NO--AP0118054
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0118054

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EXPTL. DATA ON THE ADSORPTION OF NO SUB2 FROM GASES BY ASM SILICA GEL IN A FLUIDIZED BED MAY BE SATISFACTORILY DESCRIBED BY THE EQUATION. $B \text{ DIVIDED BY } B \text{ SUB8 EQUALS } 3$ TIMES 10 NEGATIVE PRIME3 W CO PRIMETAU DIVIDED BY A SUBS H, WHERE B IS THE AMT. OF NO SUB2 PASSED THROUGH THE BED, B SUB8 IS THE AMT. ADSORBED BY THE SILICA GEL UPON SATN., W IS THE GAS VELOCITY IN M,SEC, C SUB0 IS THE INITIAL NO SUB2 CONC. IN THE GAS IN VOLPERCENT. TAU IS THE TIME IN MIN. A SUBS IS THE EQUIL. DEGREE OF ADSORPTION OF NO SUB2 ON THE SILICA GEL UNDER THE GIVEN CONDITIONS IN G,100 G, AND H IS THE HEIGHT OF THE BED IN MM. THE EXPTL. DATA WERE COLLECTED WITH GASES WITH A NEGLIGIBLE N SUB2 O SUB4 CONTENT, AT 0-40DEGREES.

UNCLASSIFIED

USSR

UDC 669.71:620.178.3

OK'KIN, B. I., BARTEN'EVA, G. F., and SAVOST'YANOVA, T. G.

"Investigation of the Durability of Aluminum Alloys"

Moscow, Zavodskaya Laboratoriya, No 5, 1972, pp 591-593

Abstract: Consideration is given to a procedure for testing the durability of flat specimens during the action of cyclical temperature stresses, and experimental data are presented on the durability of alloy AK4-1T specimens under the action of cyclical temperature and mechanical stresses with a supplementary static load. 4 figures. 1 table. 2 references in the form of foot notes.

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USSR

UDC 621.791.92

GROZDANOV, P. K., Candidate of Technical Sciences, and SAVOV, I. N., Engineer (Scientific-Research, Design-Construction, and Technological Institute of Welding and Foundry Engineering, Bulgaria); GRABIN, V. F., Candidate of Technical Sciences, ZELENIN, V. I., Engineer, DUDKO, D. A., Corresponding Member, Academy of Sciences Ukrainian SSR, MAKSIMOVICH, B. I., Candidate of Technical Sciences, and NETESA, I. V., Engineer (Institute of Electric Welding imeni Ye. O. Paton, Academy of Sciences Ukrainian SSR)

"Structure and Properties of a Composite Alloy for Surfacing"

Kiev, Avtomaticheskaya Svarka, No 2, Feb 74, pp 28-31

Abstract: The results of studying the structure and properties of a composite surfacing alloy of poured tungsten carbides and manganese German Silver MNMts20-20, containing 20% Ni, 20% Mn, balance -- copper, are presented. Alloy samples were prepared by three methods of surfacing: impregnation with a liquid alloy-lubricant and furnace heating, argon-arc welding with a tungsten electrode, and gas-flame welding. The alloys prepared by these methods were characteristically dense without the presence of slag inclusions, cracks, and other defects with almost complete preservation of the shape and properties of the tungsten carbide grains. Wear resistance of the composite alloy under the simultaneous action of tight and loose abrasives and a load on the sample

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GROZDANOV, P. K., et al., Avtomaticheskaya Svarka, No 2, Feb 74, pp 28-31

of almost 60 kg/cm^2 is 60 times higher than for steel St. 3. In abrasion tests using sand, corundum, and boron carbide abrasives, the composite alloy exhibited the least amount of wear in comparison with steels St. 3 and G13 and hard alloys VK8 and T15K6. Four figures, one bibliographic reference.

2/2

1/2 030 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--LIGHT STABILIZING PROPERTIES OF SYNTHETIC LEATHER BASED ON
POLY(VINYL CHLORIDE) MODIFIED BY LIGNIN -U-
AUTHOR--(03)--MADATOVA, D.M., SAVRANSKAYA, S.D., MADSUDOV, S.M.
COUNTRY OF INFO--USSR
SOURCE--UZB. KHIM. ZH. 1970, 14(1), 46-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--LEATHER, POLYVINYL CHLORIDE, LIGNIN, TENSILE STRENGTH,
ELASTICITY, PHOTOEFFECT.
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1999/1839 STEP NO--UR/0291/70/014/001/0046/0049
CIRC ACCESSION NO--AP0123628

UNCLASSIFIED

2/2 030

UNCLASSIFIED

PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0123628

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EXPOSURE OF PLASTICIZED POLY(VINYL CHLORIDE) (I) ARTIFICIAL LEATHER TO SUNLIGHT AND ATM. CONDITIONS CAUSES THE DECREASE OF ITS TENSILE STRENGTH AT BREAK (SIGMA) AND ELASTICITY. THE AGING COEFF. (KAPPA), DEFINED AS (INITIAL SIGMA) PER (FINAL SIGMA) TIMES 100, OF THE UNSTABILIZED I DECREASED BY 60-70PERCENT IN 3 MONTHS. I CONTG. 5-10PERCENT COTTON LIGNIN OR PINE LIGNIN RETAINED 90-5PERCENT KAPPA VALUE DURING THE SAME AGING PERIOD.
FACILITY: INST. KHIM., TASHKENT, USSR.

UNCLASSIFIED

1/2 017 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ELECTRON SPECTRA OF SOME ANTHRAQUINONE DERIVATIVES -U-
AUTHOR--(02)-PILIPENKO, A.T., SAVRANSKIY, L.I.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(4), 808-9
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ELECTRON SPECTRUM, ANTHAQUINONE, MOLECULAR ORBITAL, HYDROGEN
BONDING, AMINE, HYDROXYL RADICAL
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1997/0811 STEP NO--UR/0051/70/028/004/0308/0809
CIRC ACCESSION NO--AP0119718
UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0119718

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TO DET. THE EFFECT OF THE NATURE AND THE POSITION OF SUBSTITUENTS ON THE π SYSTEM OF ORG. MOLs., ELECTRON SPECTRA OF ANTRAQUINONE, 1, HYDROXYANTHRAQUINONE, 2, HYDROXYANTHRAQUINONE, 1, AMINOANTHRAQUINONE, 2, AMINOANTHRAQUINONE, 1, 2, DIHYDROXYANTHRAQUINONE, 2, 3, DIHYDROXYANTHRAQUINONE, 1, 2, 5, 8-TETRAHYDROXYANTHRAQUINONE, 1, 4-DIHYDROXYANTHRAQUINONE, 1, 2-DIAMINOANTHRAQUINONE, 1, 4-DIAMINOANTHRAQUINONE, AND 2, 3-DIAMINOANTHRAQUINONE WERE CALCD. BY THE MOLCAG METHOD BY USING THE PUBLISHED PROGRAM MN,PPP-2,KBI(YU. Z. KRUGLYAK, ET AL., 1969). THE CALCD. SPECTRA WERE COMPARED WITH THOSE EXPTL. DETD. IN 50PERCENT AQ. CLC. AND WITH PUBLISHED EXPTL. DATA. THE RESULTS INDICATE A COMPARATIVELY WEAK EFFECT OF THE INTERMOL. H BOND ON THE ELECTRON ABSORPTION SPECTRA. THE MAX. SHIFT IN THE SPECTRA OWING TO THE FORMATION OF H BONDS IN ALPHA SUBSTITUTED ANTHRAQUINONES WITH OH AND NH SUB2 GROUPS IS PLUS OR MINUS 20 NM. EVIDENTLY ALL BANDS, INCLUDING THE LONGWAVE BANDS IN THE 400 NM REGION, ARE CONNECTED WITH THE π , π TRANSITIONS RATHER THAN WITH THE N, π TRANSITION AS SUGGESTED EARLIER (J. W. SIDMAN, 1956).

UNCLASSIFIED

USSR

SAVRANSKIY, V. E.

"Device for Relaxation Testing of Steel"

Moscow, Zavodskaya Laboratoriya, Vol. XXXVII, No 4, 1971, pp 484-486

Abstract: A device developed at the Scientific Research Institute of Concrete and Reinforced Concrete for long and short testing of steel samples for stress relaxation under tension at normal and elevated (up to 150° C) temperatures is described. The calculations providing the basis for designing the device are presented. The basic element of the test unit is a nut runner which comprises two hydraulic cylinders, clamps and a ratchet. The nut runner is automatically operated by a simple electrical automation circuit. The vibration-frequency method is used for remote measurement of the relaxation. The basis for this method is the relation between the frequencies of the natural transverse oscillations and the tension in the wires or rods. An autooscillatory system is used for this purpose. The described unit permits series stress relaxation testing under the plant laboratory conditions of hardware plants.

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USSR

UDC 546.791

TSVIGUNOV, A. N., KOVBA, L. M., SAVRANSKIY, V. V., and ZUBOVA, YE. V.,

"Study of the High Pressure Phase of α - U_2O_5 "

Leningrad, Radiokhimiya, Vol 13, No 5, 1971, p 790

Abstract: Monocrystalline α - U_2O_5 was synthesized at high pressure and temperature. Using the method of Laue it was shown that these crystals belong to monoclinic syngony with basocentric nucleus. Systematic extinctions correspond to two Fedorov groups: C_{2h}^6 and C_2^4 . The parameters of elementary nucleus were determined to be: $a = 12.40 \pm 0.01 \text{ \AA}$, $b = 5.074 \pm 0.005 \text{ \AA}$, $c = 5.675 \pm 0.005 \text{ \AA}$, and $\beta = 99^\circ 12' \pm 6'$. Assuming four units of U_2O_5 to comprise an elementary nucleus, the density was calculated to be 10.41 g/cm^3 , agreeing well with the experimentally determined $\rho = 10.50 \text{ g/cm}^3$.

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Miscellaneous

USSR

UDC 661.666:541.7

KASATOCHKIN, V. I., KAZAKOV, M. Ye., SAVRANSKIY, V. V., NABATNIKOV, A. P.,
and RADIMOV, N. P., Institute of Fossil Fuels, Moscow

"Synthesis of New Allotropic Forms of Carbon From Graphite"

Moscow, Doklady Akademii Nauk USSR, Vol 201, No 5, 1971, pp 1104-1105

Abstract: During the exposure of pyrographite platelet to a laser beam intense evaporation and melting of carbon with the formation of craters at the point of decreasing rays was observed. The results of studies on the nature of the carbon condensed from carbon vapors are given. The carbon vaporizing from the platelets of carbon was precipitated as a silvery-white layer surrounding a thin layer of black carbon precipitate. In the experiments a heterogeneous laser was used with impulse energies of 250 and 500 joules in a free generation with an impulse length 1×10^{-3} sec. The density of the silvery-white carbon was found to be 2.48 g/cm^3 . The specific electroconductivity of the carbon layer was about one ohm $\cdot \text{cm}^{-1}$. X-ray diffraction showed a polycrystalline structure for the silvery-white carbon film with an average crystal size of 10^{-5} cm . X-ray diffraction of the black carbon was characteristic of a highly dispersed material with an eroded diffraction zone. Comparison of interplanar distances for the precipitated carbon with

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USSR

KASATOCHKIN, V. I., et al., Doklady Akademii Nauk USSR, Vol 201, No 5, 1971, pp 1104-1105

those of the cubic and hexagonal modifications of diamond and hexagonal and rhombohedral graphite showed that the silvery-white carbon obtained was a new allotropic crystalline form of carbon.

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- 90 -

USSR

UDC 621.373:590.145.6

BATANOV, V. A., YERSHOV, B. V., MAKSIMOV, L. P., SAVRANSKIY, V. V., FEDOROV, V. B.

"Laser Unit with Radiation Energy up to 10 Kilojoules for Investigating the Interaction of Powerful Luminous Fluxes with Matter"

Kratk. soobshcheniya po fiz. (Brief Reports on Physics), No 4, 1970, pp 8-14
(from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8 D188)

Translation: This article contains a description of a device created on the basis of a neodymium glass laser ($\lambda = 10,600 \text{ \AA}$) generating pulses with an energy to 10 kilojoules and ~ 1 millisecond long. The intensity of the light flux reaches 10^7 watts/cm² over an area of up to 1 cm². The device consists of three independent generators operating in parallel each of which contains three plane-parallel rods of neodymium glass pumped by pulse tubes. The experience in operating the device for three years has demonstrated that obtaining an energy of ~ 10 kilojoules is possible 5-10 times, obtaining an energy of five kilojoules is possible 50 times without replacing the tubes, active elements and reflectors.

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US3R

UDC 577.1:615.7/9

(2)

BABANOV, G. P., ISAKHANOV, A. L., BUROV, YU. A., SKOBEY, N. A., BABANOV, A. G.
and SAVRASOVA, L. I.

"Formation of the Adaptation of the Organism Under the Effect of Nitrile'
Acrylate as a Low-Intensity Factor of the Production Environment"

V sb. Toksikol. i gigyena produktov neftekhimii i neftekhim. proiz-v (Toxicology
and Hygiene of the Products of Petrochemistry and the Petrochemical Production
-- collection of works), Yaroslavl', 1972, pp 45-58 (from RZh-Biologicheskaya
Khimiya, No 8, 1973, Abstract No 852171)

Translation: Rats were forced to inhale nitrile acrylate for 6 months (I;
0.495±0.01 mg/m³, 5 hours a day, 6 days a week). The I treatment caused some
increase in the number of erythrocytes in the blood (more expressed only
during the first month of treatment) and a reduction in the number of leuco-
cytes (more expressed after 4-5 months), an increase in the total amount of
protein in the blood serum as a result of albumen and from the second half of
the effect of I -- gamma-globulins -- an increase in the free SH-group content
in the liver (during the initial period of the treatment) and to a lesser
degree in the blood serum and a reduction in the ascorbic acid content in the
blood serum and also some increase in the activity of the blood peroxydase and
1/2

USSR

(2)
BABANOV, G. P., et al., Toxicology and Hygiene of the Products of Petro-chemistry and the Petrochemical Production -- collection of works, Yaroslavl', 1972, pp 45-58

catalase. In the second half of the treatment, the changed indexes increased to the initial level. The treatment with I caused increase resistance to the animals to the effect of extremal factors (temperature drops -- $+5^{\circ}$, 10 minutes; reduced O_2 partial pressure, ethanol narcosis -- 3 g/kg, intraperitoneal). Under the acute effect of I (183 mg/m³, 2 hours) the changes in the majority of investigated indexes were insignificant. The conclusion was drawn regarding development of adaptation of the organism under the effect of low I concentrations.

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USSR

UDC 539.121

SAVRIN, V. I. Candidate of Physicomathematical Sciences, Institute of High-Energy Physics, Serpukhov

"New Results on the Serpukhov Accelerator"

Moscow, Priroda, No 2, 1972, pp 89-92

Abstract: Recently a group of physicists consisting of YU. P. GORIN, S. P. DENISOV, S. V. DONSKOV, A. I. PETRUKHIN, YU. D. PROKOSHKIN, D. A. STOYANOVA, DZh. V. ALLABI [transliterated from the Russian] (CERN), and G. GIACOMELLI (Italy) used the IFVE [Institute of High-Energy Physics] accelerator for precision experiments in the measurement of total interaction cross-sections for positively charged particles. The total cross-sections for the interaction of π^+ and K^+ -mesons and protons with protons and deuterons were determined in the 15-60 Gev energy region.

The experiment scheme was as follows: A beam of protons is accelerated in the accelerator ring to a maximum energy of 70 Gev and aimed at an interior target. The interaction of high-energy protons with the target results in the

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USSR

SAVRIN, V. I., Priroda, No 2, 1972, pp 89-92

production of a large number of secondary particles; viz., π^+ and K^+ -mesons, protons, etc. The secondary, positively charged particles formed at angles of 10-50 mrad are injected into an experimental zone outside the ring by means of a magnetic field of special configuration (magnetic shields). Here they interact with the principal target -- hydrogen or deuterium. A system of counters moving along the axis of the beam of secondary particles is used to record the π^+ and K^+ -mesons and protons scattered at various angles. At the end of an experiment the data are automatically put on punch cards and processed on a BESM-6 computer. The total number of scattered particles of each kind related to the flux density of these particles in the channel before scattering determines the total interaction cross-section. Total cross-sections in the 25-60 Gev region were measured in this way. Secondary particles with lower energies (15 and 20 Gev) were obtained by aiming at the internal target a 35-GeV proton beam on the intermediate "table" of the magnetic field. To exclude background effect, particularly interaction with the walls of the vessel holding the hydrogen or deuterium, an extra experiment is performed in which the

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SAVRIN, V. I., Priroda, No 2, 1972, pp 89-92

empty vessel itself is used as the target. The number of readings thus obtained is subtracted from the total number of readings during scattering by the hydrogen or deuterium target.

The experimental total cross-section data were obtained during a three-week work session of the accelerator. Measurements consisted of a series of experiments in which there was a cyclic interchange of hydrogen, deuterium, and "empty" targets. The use of liquid hydrogen as target and various refinements in the data gathering and processing permitted highly accurate total cross-section measurements.

The data obtained at Serpukhov on the total cross-sections for the interaction of π^+ -mesons with π^- -mesons, as well as antiprotons with protons are not at variance with the conclusion that these cross-sections converge with an increase in the incident-particle energy. One of the most important results of this experiment is that the total cross-section for the

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SAVRIN, V. I., Priroda, No 2, 1972, pp 89-92

interaction of K^+ -mesons with protons begins to increase with an increase in energy. The result of this is that there is a decrease in the difference in the total interaction cross-sections for K^- -mesons and K^+ -mesons, and therefore there are as yet insufficient grounds for thinking that the theorem on the asymptotic equality of total cross-sections is violated.

Data on the interaction with deuterons served as the basis for calculating total cross-sections for the interaction of various particles with neutrons. The energy dependence of these cross-sections proved largely the same as the dependence in the case of interaction with protons.

Thus, the experiments on the IFVE accelerator disclosed a number of new effects in the behavior of total cross-sections at energies of 20-65 Gev. This means that this energy range reveals new, previously unknown properties of the mechanism for the interaction of elementary particles.

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1/2 009
UNCLASSIFIED
TITLE--THE BEHAVIOUR OF HIGH ENERGY FORWARD SCATTERING AMPLITUDE -U-
PROCESSING DATE--16OCT70
AUTHOR--(03)-SAVRIN, V.I., TYURIN, N.YE., KHRUSTALEV, O.Z.
COUNTRY OF INFO--USSR
SOURCE--TEORETICHESKAYA I MATEMATICHESKAYA FIZIKA, 1970, VOL 2, NO 3, PP
338-342
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--SCATTERING AMPLITUDE, HIGH ENERGY PARTICLE, ASYMPTOTIC
PROPERTY, HEAVY NUCLEUS
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1985/1445
STEP NO--UR/0546/70/002/003/0338/0342
CIRC ACCESSION NO--AP0101531
UNCLASSIFIED

2/2 009

CIRC ACCESSION NO--AP0101531

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT.

UNITARITY CONDITION IS USED FOR

THE INVESTIGATION OF THE BEHAVIOUR OF FORWARD SCATTERING AMPLITUDE IN

MODERATELY HIGH ENERGY REGION AND OF THE CHARACTER OF TOTAL HADRON CROSS

SECTION APPROACHING ITS ASYMPTOTIC LIMIT.

UNCLASSIFIED

USSR

UDC 539.375

SAVRUK, M. P. and DATSYSHIN, A. P., Physicomechanical Institute, Academy of Sciences, Ukrainian SSR

"The Limit Equilibrium of a Plate Weakened by Two Arbitrarily Oriented Cracks"
Kiev, Prikladnaya Mekhanika, Vol 9, No 7, Jul 73, pp 49-56

Abstract: Consideration is given to an infinite elastic plane weakened by two arbitrarily oriented cracks of differing length. The edges of the cracks are being acted upon by arbitrary self-balancing loads. Under the assumption that the cracks are situated far from one another, the complex potentials are represented in the form of a series according to the powers of a small parameter. Coefficients of stress intensity are found in the form of corresponding expansions. Graphs are presented, which illustrate the interactions of the cracks in the case of uniaxial stretching of the plate. 5 figures. 7 references.

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USSR

UDC 539.375

DATSYSHIN, A. P., SAVRUK, M. P.

"Limiting Equilibrium of a Half Plane with an Arbitrarily Oriented Crack"

Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 2 [Thermomechanical Methods of Rock Rupture, Part 2 -- Collection of Works], Kiev, Nauk Dumka Press, 1972, pp 93-97, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V603 by S. Ya. Yarema).

Translation: A semi-infinite elastic plane containing a crack, the line of which forms angle α with the edge of the half plane, is studied. The sides of the crack are loaded with an arbitrary, self-balancing load. Assuming that distance d from the center of the crack to the edge of the half plane is greater than half the length of the crack a , the coefficients of stress intensity at the tip of the crack are written as a series with respect to powers of $\lambda = a/d$ with an accuracy to the value of λ^5 . The limiting equilibrium of the half plane with the arbitrarily oriented crack is determined. In the case of constant pressure on the side of a crack, graphs are presented of the dependence of rupture load on orientation of the crack with various values of λ , illustrating the interaction of the crack and boundary.

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USSR

UDC 539.375

SAVRUK, M. P., DATSYSHIN, A. P.

"The Limiting Equilibrium State of a Body Weakened by a System of Arbitrarily Oriented Cracks"

Termomekh. Metody Razrusheniya Gorn. Porod. Ch. 2 [Thermomechanical Methods of Rock Rupture, Part 2 -- Collection of Works], Kiev, Nauk Dumka Press, 1972, pp 97-102, (Translated from Referativnyy Zhurnal, Mekhanika, No 11, 1972, Abstract No 11 V600 by S. Ya. Yarema).

Translation: The planar problem from the theory of elasticity for an unlimited area containing N arbitrarily placed linear sections (cracks) is reduced to a system of N singular integral equations for functions characterizing the rupture of displacements along the lines of the cracks. A general solution of the integral equations and the coefficients of stress intensity at the tips of the cracks are produced as an expansion with respect to powers of a small parameter for the case of cracks located far from each other. The limiting equilibrium of an infinite plate weakened by a system of N arbitrarily oriented cracks is discussed. As an example, the limiting equilibrium of a plate with two arbitrarily oriented cracks subjected to biaxial extension at infinity is analyzed. In this case, a dia-

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USSR

UDC 539.375

SAVRUK, M. P., DATSYSHIN, A. P., Termomekh. Metody Razrusheniya Gorn. Porod.
Ch. 2, Kiev, Nauk Dumka Press, 1972, pp 97-102.

gram of limiting stresses is constructed.

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USSR

UDC 546.431'824'21+546.16

NEKRASOV, M. M., SAVOSHCHENKO, V. S., SYCH, A. M., Kiev Poly-
technical Institute

"Fluorine-Containing Barium Titanate"

Moscow, Neorganicheskiye Materialy, Vol 6, No 12, Dec 70, pp 2175-2177

Abstract: A new type of solid solution based on barium titanate is produced by interacting TiO_2 with BaF_2 in BF_3 --a substitution solid solution in the anionic portion of the crystalline lattice of BaTiO_3 with the general formula $\text{BaTi}(\text{OF})_3$. The electrical parameters of the solid solutions produced are determined.

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USSR

UDC: 621.372.837(088.8)

SAVSHINSKIY, V. A., SHUTOV, K. K.

"A Switching Device"

USSR Author's Certificate No 263007, filed 11 Dec 68, published 8 Jun 70
(from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11B173 P)

Translation: The proposed switch is based on a rectangular waveguide with resonance diaphragm containing capacitive gaps and an inductive rod. This rod is arranged perpendicular to the wide walls of the waveguide and is in electrical contact with them. The number of inductive rods in the central part of the waveguide and the number of capacitive gaps between the rods and the narrow walls of the waveguide depends on the magnitude of the working power, the dimensions of the waveguide cross section, and the type and dimensions of the constituent elements. A description is given of the operating principle of the switch, which has high working power. One illustration. A. K.

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USSR

UDC: 661.143

MANDRUGIN, V. A., SAVUKHINA, T. A., FILATOVA, L. A., KRAVKOVA,
I. A., VAVILOV, V. A., DANILOV, V. P.

"Investigation of Electrophosphors of the CRT Type"

Sb. nauch. tr. VNIi lyuminoforov i osobo chist. veshchestv (Col-
lected Scientific Works of the All-Union Scientific Research
Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5,
pp 73-82 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L184)

Translation: Electrofluorescent compositions of yellow, blue, green and red
luminescence colors are developed with a granulometric composition of 98-99%
particles of less than 12 microns and a maximum particle size of 25 microns or
less having a brightness of up to 170% of the standards at the "Krasnyy Khimik"
Plant. A technique is developed for making electroluminescent devices on a
voltage of 115 V at a frequency of 400 Hz. Bibliography of 6 titles. Résumé.

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USSR

UDC: 661.143:534-8

KRAVKOVA, I. A., MANDRUGIN, V. A., MEN'SHIKOVA, N. I., SAVU-KHINA, T. A.

"Treating Suspensions of Electrophosphors and Titanium Dioxide in an Acoustic Field"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collected Scientific Works of the All-Union Scientific Research Institute of Phosphors and Extra Pure Materials), 1971, vyp. 5, pp 114-118 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7L183)

Translation: A method is proposed for preparing suspensions of electroluminescent compositions of all luminescence colors as well as TiO_2 in lacquer on an ultrasonic installation. In this connection, there is an appreciable reduction in the time of preparation of the suspensions (by a factor of 6-20), and an improvement in the quality of the electroluminescent and reflecting layers.

Resumé.

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USSR

UDC 539.182/.184

GLEMBOTSKIY, I. I., KAROSENE, A. V., KISELEV, A. A., SAVUKINAS, A. Yu.,
SHCHADZHYUVENE, S. D., YUTSIS, A. P.

"Theoretical Study of the Absorption of Soft X-Rays by Metal Films of
Lanthanum and Cerium"

Lit. fiz. sb. (Lithuanian Physics Collection), 1972, Vol. 12, No. 2,
pp 235-244 (from RZh-Fizika, No 10, Oct 72, Abstract No 10D30)

Translation: The problem of the interpretation of an experimentally established structure of the absorption spectra of rare earth metals La and Ce on both sides of the absorption boundaries $N_{IV,V}$ was studied theoretically. The given structure is explained by the transitions $4d^{10}4f^n \rightarrow 4d^94f^{n+1}$ in triply charged ions of these elements. Interpretation of maxima of the absorption curves by discrete transitions is verified by computation of the strengths of the lines. The calculations were conducted with the aid of numerical solutions of ordinary Hartree-Fock equations. The results show that experimental maxima are well identified by the atomic transitions $4d^{10}4f^n \rightarrow 4d^94f^{n+1}$ both as to the position of the maxima and as to their relative strengths of the lines. Authors abstract.

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USSR

UDC 621.318 571

SAVUSHKIN, A. K., ZHUKOV, V. I., and MASLYUKOV, O. A.

"A Ferrite-Transistor Cell in the Control Circuits of Non-Contact Relays"

Tr. Mosk. in-ta inzh. zh.-d transp. (Proceedings of the Moscow Institute of Railroad Transportation Engineering), No 442, 1973, pp 139 - 145 (RZh
Avtomatika Telemekhanika i Vychislitel'naya Tekhnika, No 11, Nov 73,
abstract No 11 A410)

Translation: A non-contact relay with a ferrite-transistor cell in the control circuits is considered. In the proposed relay circuit the ability of the ferrite-transistor cell to give an output signal only when the magnetism of the core is rapidly reversed and to give no signal when the core magnetization is slowly reversed is used. Circuits are shown and the theoretical basis of the relationship between the V_{out} of the cell and the length of the magnetization reversal pulse front is given. Four illustrations, two bibliographic citations.

Abstract by the authors.

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USSR

UDC 621.314.58(088.6)

BANANOV, I.V., YERMOLIN, YU.A., KOZLOV, L.G., MASLYUKOV, O.A., SAVUSHKIN, A.K.
[Mosk. in-t inzh. zh.-d. transp.--Moscow Institute Of Railroad Transportation Engineers

"Device For Control Of Frequency Converter"

USSR Author's Certificate No 251670, filed 23 May 68, published 30 Jan 70 (from
RZh--Elektronika i yeye primeneniye, No 12, December 1970, Abstract No 12B524P)

Translation: The device proposed for control of a frequency converter contains a master unit with a multicell shift register and triggers. In order to simplify the device and to obtain optimum power, the output of one of the cells of the shift register is connected to one of the inputs of each trigger and the other input of each trigger is connected to the output of one of the next cells with respect to the performance of the shift register. 1 ill.

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1/2 027 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--ON THE ELECTRIC MULTIPOLE RADIATION OPERATOR -U-
AUTHOR-(02)-KRUTOV, V.A., SAVUSHKIN, L.N. S
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 5, PP 1744-1747
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--MULTIPOLE ORDER, QUANTUM THEORY, ELECTRON SPIN, CHARGED
PARTICLE, X RAY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/2232 STEP NO--UR/0056/70/058/005/1744/1747
CIRC ACCESSION NO--AP0127594
UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0127594

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EMISSION BY A MULTIPOLE OF THE ELECTRIC TYPE IS CONSIDERED WITHOUT MAKING RECOURSE TO THE LONG WAVELENGTH APPROXIMATION. THE ANALYSIS IS CARRIED OUT FOR QUANTUM TRANSITIONS OF SPIN ONE HALF CHARGED PARTICLES DESCRIBED BY THE DIRAC EQUATION. CORRECTIONS TO THE LONG WAVELENGTH APPROXIMATION ARE CALCULATED FOR THE PARTICULAR CASE OF X RAYS FROM HEAVY ATOMS. THE CORRECTIONS ARE QUITE LARGE FOR Z EQUALS 92. FACILITY: NAUCHNO-ISSLEDOVATEL'SKIY FIZICHESKIY INSTITUT, LENINGRADSKOGO GOSUDARSTVENNOGO UNIVERSITETA.

UNCLASSIFIED

USSR

BURTOV, A. I., GRUSHVITSKIY, R. I., METTER, E. Ya., PETROV, V. A., PLATONOV, V. V., SAVUTKIN, V. V., VEDESHENKOV, V. A., VOLKOV, A. F., ZENKIN, V. D., LIKHONINSKIY, V. S., and SOROKIN, G. K.

"Computer Device"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obratztsy, tovarnyye znaki, No 27, 1972, p 162, No (11) 351216

Translation: This patent describes a computing device containing resolving modules with decoupling cells at the power supply inputs. It also has a control block connected to the inputs of a switching block and an efficiency indicator. Every output of the switching block is connected to the control input of one of the decoupling cells, thus improving the reliability of the device.

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SSR

UDC: 681.32.001

BURTOV, A. I., PETROV, V. A., SAVUTKIN, V. V., SHAGULIN, V. I., VOLKOV, A. F.,
SOROKIN, G. K., TRAPEZNIKOV, V. A., CHEGLAKOV, Ye. A., CHEKMAREV, Yu. D.

"A Device for Determining the Region of Operability of a Digital Computer
With Respect to Supply Voltages"

USSR Author's Certificate No 291206, filed 7 Aug 68, published 29 Mar 71,
(from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 10, Oct
71, Abstract No 10B146 P)

Translation: There is a well-known device which determines the region of operability of a digital computer with respect to supply voltages. This device contains a control unit, voltage commutation module, an element for controlling the sign of the independent voltage increment, and a device for visual display. However, such devices are incapable of monitoring the changes in digital computer elements which occur as a result of various ambient factors while the computer is in operation. To speed up determination of the limits of the region of operability and improve the reliability of measurements, the signal input of the element for controlling the sign of the independent voltage increment in the device introduced by this Author's Certificate is connected to the output of the voltage commutation module, while the controlling input and the

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USSR

BURTOV, A. I. et al., Soviet Patent No 291206

output of the sign controller are connected to the control unit, the auxiliary output of the control unit being connected to the device for visual display, which is connected in turn to the voltage commutation module. This enables observation of the change in the region of operability of the digital computer with respect to supply voltages during operation, as well as evaluation of various computer characteristics (e.g., the availability factor, operability margin with respect to drift of element parameters, operating stability with respect to random perturbations of the power supply and the ambient medium). One illustration.

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USSR

SAVVA, V. A.

UDC 539.194

"Stationary Populations of Vibrational Levels of Molecules in an Inert Gas"
Moscow, Zhurnal Prikladnoy Spektroskopii, Vol 19, No 3, Sep 73, pp 410-413

Abstract: An analytical solution is found for the problem of distribution of molecules of a diatomic gas (anharmonic oscillators) by vibrational levels in the presence of transitions between adjacent levels induced by vibrational-translational and radiation relaxation and stationary pumping. The molecular gas is a small impurity in a gas diluent which is inert relative to vibrational excitation. The distribution of the molecules is non-Boltzmann. Corresponding to pumping in each channel $v-1 \rightarrow v$ (v is the number of the level) is a certain quantity D_v which is found. Pumping in this channel leads to an increase in the populations of all levels $v' \geq v$ by a factor of D_v . In the special case of isolated pumping in channel $0 \rightarrow 1$ the Boltzmann distribution is preserved for all excited levels in the gas although their populations are increased as compared with the equilibrium levels. It is shown that the relaxation time of the first excited level can be determined by measuring the coefficients of absorption with and

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USSR

SAVVA, V. A., Zhurnal Prikladnoy Spektroskopii, Vol 19, No 3, Sep 73, pp
410-413

without pumping. The author thanks B. I. Stepanov and P. A. Apanasevich
for constructive criticism.

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USSR

SAVVA, V. A.

UDC 539.194

"Vibration Level Populations of Diatomic Molecules Under Stationary Pumping"
Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 18, No 1, Jan 73, pp 46-53

Abstract: The article uses the kinetic equation for the vibration level populations of diatomic gas molecules to obtain its analog for an energy continuum. The distribution function under stationary pumping conditions is found from the solution of the equation. The form of the distribution function obtained in analytic form is analyzed in detail for the case of nonemitting molecules, when radiative transitions can be ignored. As a result of vibration exchange in the lower part of the energy band the distribution is close to a quasi-equilibrium one in the case of a constant number of vibration quanta; the effective vibrational-band temperature rises with an increase in the energy of the vibrational state. There is a sharp population drop in the middle part of the band. The distribution in the upper part of the band is close to a Boltzmann distribution with the temperature equal to the gas temperature. The sharp shift in the character of the distribution function in the band is due to the dependence of the relaxation process probabilities on the exponential energy.

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USSR

SAVVA, V. A., Zhurnal Prikladnoy Spektroskopii, Vol 18, No 1, Jan 73, pp 46-53

The author thanks P. A. APANASEVICH for his interest in the work and useful comments.

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USSR

SAVVA, V. A.

"Incomplete Equilibrium Occurring as a Result of Oscillatory-Oscillatory Energy Transfer in a Relaxing Medium"

Minsk, Zhurnal Prikladnoy Spektroskopii; December, 1972; pp 992-9

ABSTRACT: An incomplete equilibrium in a diatomic gas of anharmonic oscillators characterizing the Treanor distribution (J. Chem. Phys., 48, 1798, 1968) is analyzed. The author studies the change in entropy, the oscillatory and translational energy, and other macroscopic characteristics of a relaxing gas under conditions of complete and incomplete equilibrium in comparison with an initial state corresponding to the Boltzmann distribution with different oscillatory and gas temperatures. The appearance of an inversion as well as its dissolution is accompanied by an increase in the entropy of the gas. Two new conclusions are drawn from the Treanor distribution: first, based on finding an extremum of the entropy of an oscillatory subsystem; second, with the use of the Gibbs canonical distribution. The quasi-stationary and equilibrium distributions are calculated, taking into account the heating up of the translational subsystem, which is considerable. It is shown that oscillatory-oscillatory energy transfer strongly depletes the lower levels and hinders the formation

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USSR

SAVVA, V. A., Zhurnal Prikladnoy Spektroskopii; December 1972, pp 992-9

of a partial inversion at these transitions, which takes place readily at the higher oscillatory levels. Therefore, when oscillation occurs in many transitions at the same time, lines with smaller J should be observed at the upper transitions and with larger J at the lower. This is observed experimentally in a CO laser.

The article includes one table and one illustration. There are 14 references.

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USSR

UDC 539.4.025 + 534.141.2

DONUKIS, T. L., SAVVAKIN, G. I., TITOV, P. V., and KHANDROS, L. G., Institute of Metal Physics, Academy of Sciences Ukr-SSR, Kiev

"Steel Strengthening by Explosive Loading"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 6, No 4, 1970, pp 32-35

Abstract: Metal strengthening by means of impulse loading is based on the distribution of a compression impulse through a solid body, whose amplitude exceeds the fluidity limit by ten to hundred-fold, causing structural and phase changes in the material. This phenomenon occurs without manifested macroscopic changes in the material. Structural changes and the strengthening connected with it are due to the mechanical action of the shock wave and the temperature changes accompanying it. Therefore the strengthening depends on the load and the form and volume of specimens subjected to the shock. In this study steel strengthening was achieved by explosive deformation. A diagram for the experimental setup is included. The greatest strengthening was observed with extensive final deformations, and was accompanied by pulverization of mosaic blocks. Block pulverization increases with longer action of the force, but does not depend on the pressure itself.

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USSR

UDC 681.3.06:51

MIKHAYLOV, V., VILENSKAYA, L., SAVVAKINA, A., KRUTYANSKIY, A.

"A Small Monitor for the Ural-14 Computer"

Elektronno-vychisl. Tekhn. i Programmir. [Electronic Computer Equipment and Programming -- Collection of Works], No 3, Moscow, Statistika Press, 1970, pp 5-11, (Translated from Referativnyy Zhurnal, Kibernetika, No 6, 1971, Abstract No 6 V619).

Translation: A monitor is described for the Ural-14 computer, providing for the running and printer output of one job during simultaneous input of a second job. The monitor organizes its work on the basis of operator requests input from the control panel, requests from the job, consisting of a special type of instructions, interrupt signals from punching devices and error signals.

USSR

UDC 621.372.061

SAVVATEYEV, YU. I.

"Stability of Stochastic Automatic Phase Frequency Control Systems in the Small"

Tr. Mosk. elektrotekhn. in-ta svyazi (Works of Moscow Electrotechnical Communications Institute), 1970, vyp. 1, pp 99-104 (from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9A52)

Translation: The necessary and sufficient conditions of asymptotic stability of automatic phase frequency control systems with various types of filters under multiplicative noise effects are defined. The bibliography has eight entries.

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UDC 539.389.2:669.15

USSR

DONUKIS, T. L., LOBODYUK, V. A., SAVVAKIN, G. I., TITOV, P. V.,
FEDAS, N. P., and KHANDROS, L. G., ~~Institute of Metal Physics,~~
Academy of Sciences Ukr SSR

"The Effect of Shock Loading on the Structure and Properties of
Fe - Ni Alloys"

Kiev, Metallofizika, No 32, 1970, pp 88-94

Translation: The structure and properties of Fe - 30% Ni and
Fe - 32% Ni alloys after the passage of shock waves of 100 and
300 kbar were studied. The loading was made by a shock of a
steel plate. The time of the effect of high pressure was 1.4
microseconds. A shock wave of 300 kbar induces an almost full
 $\alpha \rightarrow \gamma$ transformation. A needle structure unusual for aus-
tenite, twins, and a cellular dislocation structure were observed
in the γ -phase formed.

After the $\alpha \rightarrow \gamma$ transformation induced by the passage of
a shock wave, hardness reached 270 Hv, and the γ -phase hardened
by shock loading had a hardness of 220 Hv. The recovery of the
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USSR

DONUKIS, T. L., et al., Metallofizika, No 32, 1970, pp 88-94

δ -phase formed as a result of the $\alpha \rightarrow \delta$ transformation under the effect of shock loading began at 200°C below the recovery temperature of 70% deformed austenite.

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Corrosion

USSR

UDC 546.821.542.61

KOIRNILOV, I. I., GOLUBTSOVA, R. B., and SAVVATEYEVA, S. M., Institute of Metallurgy imeni A. A. Baykov of the Academy of Sciences USSR
"Study of Solubility of Titanium Suboxides and Metallic Titanium in Various Chemical Media"

Moscow, Neorganicheskiye Materialy, Vol 9, No 8, Aug 73, pp 1450-1451.

Abstract: This work studies the solubility of the suboxides Ti_3O , Ti_6O and metallic titanium in various chemical media, of interest from the standpoint of their stability and corrosion resistance, particularly in corrosive media. The alloys studied were prepared, annealed at 400-600° C and cooled in air. They were then dissolved in various chemical media at room temperature. After the experiment, the insoluble powder sediment was filtered, washed, the filtrate was evaporated down to a certain volume and the titanium content was determined. A table of solubilities of suboxides and metallic titanium in the chemical media tested is presented. Test media were H_2SO_4 , HCl , HNO_3 and H_3PO_4 .

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Titanium

USSR

UDC 537.29

GOLUBTSOVA, R. B., and SAVVATEYEVA, S. M., Moscow

"On the Solubility and Electrochemical Behavior of the Phases in Titanium-Based Alloys"

Moscow, Fizika i Khimiya Obrabotki Metallov, No 1, Jan-Feb 71, pp 137-140

Abstract: The β -phase isolation in titanium-based alloys was investigated. A scientific approach to the selection of the electrolyte for the separation of α - and β -solid titanium solutions, based on the difference in the dissolving rate of the phase and the α -solid solution, is suggested. A regular relationship between the solubility and the electrochemical behavior of the phases was established. On the basis of the investigation, a scientifically substantiated selection of the electrolyte which provides a selective separation of the phases in alloys can be made.

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UDC: 621.317.44

USSR

GUTOVSKIY, I. G., ZHITSKOVA, Z. A., LAVROV, V. P., PEVZNER, G. S., SAVVIN
A. M., KELEBNIKOV, S. P.

"A Device for Determining the Magnetization Curve and Hysteresis Loops of
Magnetic Materials"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztzy, Tovarnyye Znaki,
No. 7, Mar 72, Author's Certificate No 329486, Division G, filed 8 Apr 68,
published 9 Feb 72, p 182

Translation: This Author's Certificate introduces a device for determining
the magnetization curve and hysteresis loops of magnetic materials. The
device contains a measurement and a magnetizing coil for the specimen to be
studied, a fluxmeter (in the form of an integrating amplifier), an adder,
an integrating amplifier for the magnetization circuit, a power amplifier,
a calibrated resistor, and a registration instrument. As a distinguishing
feature of the patent, the device is designed for increased precision and
speed, and for automation and programming of the measurement process. For
this purpose it is equipped with a program input controller of the change
in magnetic flux in the form of a time-variable voltage controller. The

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... OVSKIY, I. G. et al., USSR Author's Certificate No 329486

device also includes a switch. One input of the adder is connected to the voltage controller, and the other adder input is connected to the output of the magnetic fluxmeter. The output of the adder is connected to the integrating amplifier of the magnetization circuit through the switch. The controlling input of the switch is connected to the output of the adder and to the controlling input of the voltage controller through a logic circuit of the "exclusive OR" or "equivalence" type.

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USSR

UDC: 532.5:532.135

GOLOVIN, V. M. and SAVVIN, L. L.

"Nonstationary Currents in Non-Newtonian Fluids"

V sb. Materialy nauchno-tekhn. konferentsii. Kuybyshevsk. aviats. in-t (Materials of the Scientific-Technical Conference, Kuybyshev Aviation Institute) 1970, pp 75-77 (from RZh-Mekhanika, No. 8, Aug 70, Abstract No. 8B1169)

Translation: For non-Newtonian fluids whose flow curves can be approximated by a power rheological equation or the Shvedov-Bingham model, the conditions for establishing a stationary mode are considered in connection with a dissipative heat sink in the gap of a rotatory viscosimeter with a nonconducting inner cylinder and a constant temperature inside the cylinder. The curvature of the walls is neglected. Since stabilization of the hydraulic regime follows from stabilization of the thermal regime, the conditions for establishing the heat regime are considered. The solution to the problem is obtained in integral form; it is then found

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USSR

GOLOVIN, V. M., et al, V sb. Materialy nauchno-tekhn. konferentsii. Kuybyshevsk. aviats. in-t, 1970, pp 75-77

that the stabilization conditions depend on the magnitude of the parameter determining the rheological constants, their temperature dependence, and the width of the viscosimeter gap. It is shown that at the initial moment, the heat regime is established with infinitely high velocity (the heat flow to the outside wall of the cylinder is equal to infinity), which follows from the uniform heat source distribution over the fluid volume. G. B. Froysheter

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1/3 . 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

TITLE--NEW ORGANIC REAGENTS FOR THE PHOTOMETRIC DETERMINATION OF BARIUM,
STRONTIUM, CALCIUM, AND SULFATE ION -U-

AUTHOR--(03)--PETROVA, T.V., KHAKIMKHODZHAYEV, N., SAVVIN, S.B.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (2), 259-65

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHOTOMETRIC ANALYSIS, BARIUM, STRONTIUM, CALCIUM, SULFATE,
COMPLEX COMPOUND/(U)KUZ ION EXCHANGE RESIN

CENTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--2000/1539

STEP NO--UR/0062/70/000/002/0259/0265

CIRC ACCESSION NO--AP0125167

UNCLASSIFIED

2/3 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125167

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. 2,7,BISAZO DERIVS. OF CHROMOTROPIC ACID WERE SUGGESTED AS ANAL. REAGENTS MAINLY FOR BA AND SR, AS WELL AS FOR OTHER ALK. EARTHS. CHROMOTROPIC ACID WAS COUPLED IN ALK. SOLN. WITH DIAZOTIZED AMINES IN THE PRESENCE OF SALTS OF LI AND NA WHICH SERVED AS CATALYSTS. THE FOLLOWING CONDITIONS WERE DETD. EXPTL. FOR SPECTROPHOTOMETRY OF THE INDICATED METAL IONS IN AQ. SOLN. (UNLESS MENTIONED OTHERWISE) FOR DERIVS. OF I (X SHOWN): I, X EQUALS 4,H, NO DETAILS; I, X EQUALS P,NO SUB2, CU PH 2,4, TH PH 1.6,2, LA PH 2,4; I X EQUALS P,SO SUB3 H, LA PH 3,4 IN 80PERCENT ETOH, TH PH 1.5,2, CU PH 2,6; I, X EQUALS M,SO SUB3 H, LA PH 3,5.5 IN 80PERCENT ETOH, TH PH 1.5,2.5, CU PH 3,6; I, X EQUALS P,ASO SUB3 H SUB2, TH PH 3.5,4, CU PH 2.5,4, LA PH 2.8,3.5. THE ABSORPTION SPECTRA OF THE ACIDS AND THEIR METAL COMPLEXES WERE REPORTED AND CALIBRATION CURVES SHOWN FOR DETN. OF BA, SR, AND SO SUB4 PRIME2 NEGATIVE. I, X EQUALS P,NO SUB2, WAS BEST FOR THE PHOTOMETRIC DETN. OF SR, BA, AND SO SUB2 PRIME2 NEGATIVE. COLOR TESTS FOR AL AND PB WITH I WERE ALSO POSSIBLE. OTHER I TESTED INCLUDED THOSE WITH X EQUALS M,NO SUB2, P, ME, M,ME, P,MEQ, MICO SUB2 H AND P,CL. FOR PHOTOMETRIC DETN. OF SMALL AMT. OF SO SUB4 PRIME2 NEGATIVE THE COMPLEX OF BA WITH I, X EQUALS P, NO SUB2, WAS USED AS AN INDICATOR IN AQ. ETOH,ME SUB2 CO; THE METHOD WAS USEFUL FOR DETN. OF SO SUB4 PRIME2 NEGATIVE IN TAP WATER; THE SAMPLE WAS PASSED OVER KU2 ION EXCHANGE RESIN IN H POSITIVE FORM TO REMOVE THE INTERFERING CATIONS, THEN ANALYZED COLORIMETRICALLY IN THE PRESENCE OF THE BA,I COMPLEX. DETN. OF 4,5 GAMMA BA AND SR WAS POSSIBLE.

UNCLASSIFIED

3/3 018
CIRC ACCESSION NO--AP0125167
ABSTRACT/EXTRACT--FACILITY:
MOSCOW, USSR.

UNCLASSIFIED

PROCESSING DATE--30OCT70

INST. GEOKHIM. ANAL. KHIM. IM. VERNAOSKOGO,

UNCLASSIFIED

1/3 014 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--COMPLEXING OF 2,2,THIAZOLYLAZO,1,8,DIHYDROXY,3,6,
NAPHTHALENEDISULFONIC ACID DERIVATIVES WITH METAL IONS -U-
AUTHOR-(C4)-SAVIN, S.B., ROZOVSKIY, YU.G., PROPISTSOVA, R.F., LIKHONINA,
YE.A.
COUNTRY OF INFO--USSR
SOURCE--Zh. ANAL. Khim. 1970, 25(3), 423-9
DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--AMINE, THIAZOLE, ALUMINUM COMPLEX, THORIUM COMPOUND, GALLIUM
COMPOUND, ZIRCONIUM COMPLEX, NAPHTHALENE, SULFONIC ACID, POTENTIOMETRIC
TITRATION, ANALYTIC CHEMISTRY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2092

STEP NO--UR/0075/70/025/003/0423/0429

CIRC ACCESSION NO--AP0125678

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE—20NOV70

273 014

CIRC ACCESSION NO--AP0125678

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. NEW REAGENTS BASED ON VARIOUS DERIVS. OF 2,AMINOTHIAZOLE AND CHROMOTROPIC ACID WERE SYNTHESIZED AND THEIR COMPLEX FORMATION WITH TH, ZR, GA, AND AL WAS STUDIED. THE REAGENTS ARE RED POWDERS, IN THEIR H FORM AND WELL SOL. IN H SUB2 O, HCONME SUB2, AND MECH. AQ. SOLNS. OF THE REAGENTS ARE NOT STABLE. THE INTENSITY AND COLOR OF THE REAGENTS DEPENDS ON THE ACIDITY OF THE MEDIUM. THEY ARE BLUE GREEN COLORED IN A CONCD. H SUB2 SO SUB4, YELLOW IN 1-10N HCL, VIOLET IN THE PH RANGE 1-5, RED CRIMSON IN THE PH RANGE 7-12, AND BLUE IN 10PERCENT KOH. THE PREPN. AND BEHAVIOR OF 4,5,DIMETHYL,2, THIAZOLYLCHROMOTROPIC ACID (1) IS DESCRIBED IN DETAIL. 1 CAN BE REPRESENTED AS A 4 BASIC ACID. THE 1ST EQUI. POINT ON THE POTENTIOMETRIC TITRN. CURVE REPRESENTS THE NEUTRALIZATION OF 2 SULFO GROUPS, THE 2ND POINT THE TITRN. OF THE 1ST OH GROUP OF THE NAPHTHALENE NUCLEUS, THE DISSOCN. OF THE 2ND OH GROUP TAKES IN THE ALK. REGION. IN THE ACID REGION 1 FORMS 2 PROTONIZED FORMS, AT PH IS SMALLER THAN 1 A YELLOW THIAZOLYL CATION WITH MAX. ABSORBANCE AT 480 NM AND IN CONCD. H SUB2 SO SUB4 A 2ND PROTONIZED FORM WITH MAX. ABSORBANCE AT 640 MU M. 1 REACTS WITH SEVERAL ELEMENTS, GIVING VERY CONTRASTING COLORS WITH AL, ZR, TH, AND GA. 1 FORMS WITH AL 2 DIFFERENT COMPLEXES. IN AQ. SOLNS. AT PH 3-4 THERE IS A BLUE COMPLEX WITH MAX. ABSORBANCE AT 590 NM AND THE 2ND COMPLEX IS FORMED AT PH 1-2.5 REGION. THIS COMPLEX IS BLUE GREEN AND HAS A HIGH MOLAR ABSORPTIVITY. IN A AQ. ALC. SOLN. ONLY THE 2ND COMPLEX FORMS WITH MAX. ABSORBANCE 630 NM. TEMP. AND ORDER OF ADDN. DO NOT AFFECT THE YIELD OF THE COLORED COMPLEX. AL AND 1 REACT IN A 1:1 MOLAR RATIO.

UNCLASSIFIED

3/3 014

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0125678

ABSTRACT/EXTRACT--FACILITY: INST. GEOCHEM. ANAL. CHEM., MOSCOW, USSR.

UNCLASSIFIED

1/2 039 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--CHELATE ADSORBENTS BASED ON AMINOPOLYSTYRENE AND RESORCINOL A70
DERIVATIVES -U-
AUTHOR--(03)--YLLISFYEVA, O.P., SAVVIN, S.B., GRACHEVA, R.F.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(1) 45-8
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RESORCINOL, CHELATE COMPOUND, ADSORPTION, FORMALDEHYDE,
ORGANIC NITRO COMPOUND, AMINE, STYRENE, POLYMER, COPPER, NIOBIUM,
URANIUM, LANTHANUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0300

STEP NO--UR/0075/70/025/001/0045/0048

CIRC ACCESSION NO--AP0111494

UNCLASSIFIED

SN IN HCL SOLN. TO POLYVINYLALCOHOL. RESORCINOL
 III WITH 1. 4-(PHENYLAZO)RESORCINOL, 4-(2-HYDROXYPHENYL)AZO-RESORCINOL
 4-(2-METAARSENATOPHENYLAZO)RESORCINOL, OR 4-(2-PYRIDYL)AZO-RESORCINOL
 GAVE IV (R IS H, PH, 2-HYDROXYPHENYL, 2-METAARSENATOPHENYL, OR
 2-PYRIDYL, RESP.). ALL IV CHELATE METALS AND CAN BE USED AS THE
 SELECTIVE ADSORBENTS FOR CU, U, NB, AND LA. THE ADSORPTION OF THESE
 METALS VARIES WITH THE PH IN A DIFFERENT MANNER FOR ALL IV. - IV (R
 EQUALS 2-PYRIDYL) ADSORBS 90PERCENT CU AND NB FROM N HCL WHILE UO SUB2
 AND LA ARE NOT ADSORBED; IV (R EQUALS H) ADSORBS SIMILAR TO 100PERCENT
 NB AT PH 1 WHILE CU IS NOT ADSORBED.

UNCLASSIFIED

1/2 008
UNCLASSIFIED
TITLE--EFFECT OF SUBSTITUENTS ON THE DISSOCIATION OF THE HYDROXY GROUPS ON
THE NAPHTHALENE RING OF BISAZO SUBSTITUTED CHROMOTROPIC ACID -U-
AUTHOR--PETROVA, T.V., KHAKIMKHODZHAYEV, N., SAVVIN, S.B.
COUNTRY OF INFO--USSR
SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 226-30
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DISSOCIATION CONSTANT, HYDROXYL RADICAL, NAPHTHALENE, ORGANIC
AZO COMPOUND, CONJUGATE BOND SYSTEM, ORGANIC SULFUR COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1987/1058

STEP NO--UR/0075/70/025/002/0226/0230

CIRC ACCESSION NO--AP0104456

UNCLASSIFIED

APPROVED FOR RELEASE: 09/01/2001

CIA-RDP86-00513R002202810020-4

2/2 039

CIRC ACCESSION NO--AP0111494

UNCLASSIFIED
ABSTRACT. THE NITRATION OF POLYSTYRENE (MOL.
WHICH WAS REDUCED WITH

2/2 008

CIRC ACCESSION NO--AP0104456
ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--11SEP70

ABSTRACT. THE DISSOCN. OF THE OH GROUP OF THE NAPHTHALENE NUCLEUS FOR 27 BIS(PHENYLAZO SUBSTITUTED) CHROMOTROPIC ACIDS WITH THE SO SUB3 H, CO SUB2 H, OH, OME ANE ME GROUPS IN THE C SUB6 H SUB6 NUCLEI IN DIFFERENT POSITIONS WAS STUDIED. AN INDUCTION EFFECT OF SUBSTITUENTS TOGETHER WITH A CONJUGATION EFFECT EXISTS FOR REAGENTS WITH SUBSTITUENTS IN THE M AND P POSITIONS IN THE C SUB6 H SUB6 RINGS. THUS, SOME OF THE SUBSTITUENTS INCREASE AND SOME DECREASE THE ACID PROPERTIES OF THE OH GROUPS. SUBSTITUENTS IN THE O POSITION, IRRESPECTIVE OF THEIR CHARACTER, DECREASE THE ACID PROPERTIES OF THE REAGENTS, OWING TO STABILIZATION OF THE QUINONE HYDRAZONE FORM OF THE REAGENT.

UNCLASSIFIED

USSR

UDC 543.70

SAVVIN, S. B., MYASOYEDOV, B. F., YELISEYEVA, O. P.,
Institute of Geochemistry and Analytical Chemistry imeni
V. I. Vernadskiy, Moscow, Academy of Sciences USSR

"Removal of Microimpurities of Tantalum from Niobium by Sorption
on Chelate Resins"

Moscow, Zhurnal Analiticheskoy Khimii, Vol XX, No 7, pp 1023-1026

Abstract: The authors report the results of their study of the separation of small amounts of tantalum from niobium using chelate resins -- asoderivatives of polystyrene containing arsono groups. The experimental procedure is described and data are presented for the sorption of test quantities of ^{182}Ta and ^{95}Nb from HCl and H_2SO_4 under varying conditions and as a function of the time the initial Ta solution has been stored. The effect of the Nb concentration on sorption of the test quantities of Ta from 20 N H_2SO_4 is also given. Data are presented for sorption of Ta by one of the arsono groups from 20N H_2SO_4 , desorption of ^{182}Ta by anhydrous hydrofluoric acid (20 mg of resin, $V = 10 \text{ mZ}$), and sorption of Ta in the presence of 10 mg of Nb from 20 N H_2SO_4 . The experiment in

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USSR

SAVVIN, S. B., et al, Zhurnal Analiticheskoy Khimii, Vol XX,
No 7, pp 1023-1026

separating niobium from microimpurities of tantalum by sorption
on a resin from 20 N H_2SO_4 solutions was successful.

2/2

AP0051160

Abstracting Service:
CHEMICAL ABST. 5-70

Ref. Code:
UR 0071

103506k Biological purification of waste waters during the
production of baker's and nutrient yeasts. Savvina, A. P.;
Rabina, V. D. (USSR). *Ferment. Spirt. Prumysl.* 1976, 55(1),
38-40 (Russ). A 2-chamber system procedure is outlined in
which the waste water is subjected to a CH_4 fermentation at 35°
and a pH of 7.2 in the 2nd stage, so that the BOD, which origi-
nally is 3000, will become lowered to 83 for the waste water from
the fodder yeast production, and to 60 mg O/l. for the one from
the baker's yeast plant.
Werner Jacobson

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19811207

USSR

UDC: 539.385

KUDRYAVTSEV, I. V. and SAVVINA, N. M., Institute of metallurgy
imeni A. A. Baykov, Academy of Sciences USSR

"Effect of the Size Factor and Forced Fit on the Cyclic Strength
of Unburnished and Roller-Burnished Specimens From Titanium
Alloy With Aluminum"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press,
1971, pp 81-86

Translation: The article offers fatigue test data (based on
10 million cycles) on titanium alloy specimens with effective
area diameters of 12, 20, 40, and 180 mm. The tests included
smooth specimens and specimens with bushings force-fitted on
both unburnished and roller-burnished surfaces. (3 illustrations,
3 bibliographic references; summary).

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TITLE--INVESTIGATION OF CONCRETES WITH DIFFERENT KINDS OF DISPERSE
STRUCTURES AND FORMS OF MOISTURE BINDING IN CEMENT STONE -U-
AUTHOR-(04)-SAVVINA, YU.A., KAZANSKIY, V.M., LEYRIKH, V.E., KAZANSKIY,
M.F.
COUNTRY OF INFO--USSR

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CIRC ACCESSION NO--AP0125747 UNCLASSIFIED
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMBINED STUDY HAS BEEN MADE OF
HYDROPHILIC, PHYSICAL AND MECHANICAL PROPERTIES OF CEMENT STONE WITH
DIFFERENT KINDS OF DISPERSE STRUCTURES. BY MEANS OF THE METHODS OF
THERMOGRAMS AND ENERGOGRAMS OF DRYING, IT IS POSSIBLE TO CHARACTERIZE
THE MOISTURE DISTRIBUTION NOT ONLY ACCORDING TO THE FORMS OF BINDING,
BUT ALSO ACCORDING TO POROSITY AND SURFACE AREA. THE RELATIONSHIP HAS
BEEN CONSIDERED BETWEEN THE PHYSICAL AND MECHANICAL PROPERTIES OF
CONCRETES WITH DIFFERENT FORMS OF BINDING. THE GAS AND WATER
MOISTURE IN THEM WITH DIFFERENT FORMS OF BINDING. THE GAS AND WATER
PERMEABILITY OF CEMENT STONE AND CONCRETE IS MAINLY DETERMINED BY THE
PRESENCE IN THEIR POROUS STRUCTURE OF MACROPORES WITH R LARGER THAN 10
PRIME NEGATIVES CM AND DEPENDS LITTLE ON MICROPOROUS STRUCTURE.
FACILITY: NII BETONA I ZHELEZOBETONA, MOSCOW, KIEV. TEKHNOLOGICHESKIY
INST. LEGKOY PROMYSHLENNOSTI. VNII MAGISTRAL'NYKH
TRUBOPROVODOV, MOSCOW KIEV. INZHENERNO-STROITEL'NYY INSTITUT.

PROCESSING DATE--30OCT70

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USSR

SAVVOV, V. I., MARGULIS, D. S.

"Synthesis of Display Systems on the Basis of Minicomputers"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1972, No 1, pp 119-122 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V688, by the authors).

Translation: Certain problems of synthesis of a multiterminal display complex based on minicomputers are studied. A method of formal description of procedures for editing of data using the apparatus of equivalent matrix transforms is presented.

USSR

UDC 681.142.4

MARGULIS, D. S., REZANOV, V. V., and SAVVOV, V. I.

"Series of Videoterminal Devices for Third-Generation Computers"

Kiev, Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 4, 1971, pp 50-53

Abstract: This article is concerned with using the latest technical achievements to develop terminal devices and to carry out lengthy investigations of their design and use. The graphic data-display station consists of the following modular assemblies: a graphic cathode-ray display and an input block and information editor. This cathode-ray display is designed to convert coded messages from the computer into a visual equivalent in the form of points, segments of lines, circles or arcs, and symbols on the display screen. A system of information words is used to code the information. The authors graphically depict the mode of points and define the use of the two information words employed for this purpose. The vector mode is also shown graphically and described, the first pair of coordinates referring to the initial point. The first word has a content similar to the first word of the point mode, differing in that the operational characteristic is coded as 010. The fixed increment mode permits the authors to reproduce arbitrary

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USSR

MARGULIS, D. S., et al., Mekhanizatsiya i Avtomatizatsiya Upravleniya, No 4, 1971, pp 50-53

curves and to approximate them by a broken line with fixed intervals and a limited number of directions. The symbol mode permits reproduction of alphanumeric and symbolic information, beginning from an arbitrary point of the frame. The circle mode permits the reproduction of circles and arcs. The authors list in detail the composition of the vacuum-tube graphic display and group of possible editing operations. The article contains three figures.

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USSR

UDC 577.1:547.96:541

SAVITS'KIY I. V., Chair of Biochemistry, Odessa Medical Institute imeni N. I. Pirogov

"Main Results of Studies on Radiation Enzymology"

Kiev, Ukrainskiy Biokhimicheskiy Zhurnal, Vol 42, No 3, 1970, pp 294-301

Abstract: A review is presented of studies in radiation enzymology, with emphasis on those conducted at the Odessa Medical Institute. It was shown that a certain organ and tissue specificity exists with respect to radiation-induced biochemical disorders in irradiated animals. X-ray irradiation leads to extensive changes in the distribution and functioning of various reactions. The radiation factor alters the distribution of enzymes and coenzymes in the cells, primarily their movement from mitochondria and nuclei into hyaloplasm. Radiation decreases the biosynthesis of coenzymes and increases their destruction by activating certain enzymes. Individual enzyme systems respond differently to actual radiation than to radiomimetic drugs, so that disturbances of tissue metabolism differ in degree. Many of the enzyme disruptions are reversible, as shown by the fact that injection of nicotinamide and ATP favors normalization of NAD and NADP content, as well as of the activity of some dehydrogenases in subcellular structures.

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1012095 "Condensation" of a polymer solution. Berlin, A.
A. Savad'yan, A. A. Enikolopyan, N. S. (Inst. Khim. Fiz. Mos-
cow, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 16-19
(Russ). Math. anal. of the thermodynamic characteristics of dil.
polymer solns. showed that when the polymer mols. have a ten-
dency to interact, forming coils, there is a crit. concn. (c) above
which there is a tendency toward formation of larger coils contg.
many mols. Under certain conditions, the polymer may form a
single, large dissolved coil. In a poor solvent or at the θ point c
 $= \infty$. However, in a good solvent $c < \infty$. Also c decreases with
the increase in the mol. wt. of the undissoc. polymer. CPJR.

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